

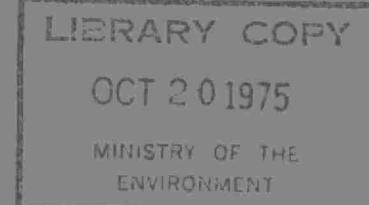
OPERATING SUMMARY

THE REGIONAL MUNICIPALITY OF
HALDIMAND-NORFOLK

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HAGERSVILLE
WATER POLLUTION CONTROL PLANT

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MANAGER, UTILITY OPERATIONS
B. Hansler

**HAGERSVILLE
WATER POLLUTION CONTROL PLANT**

operated for
the Regional Municipality of
HALDIMAND-NORFOLK
by the
MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by

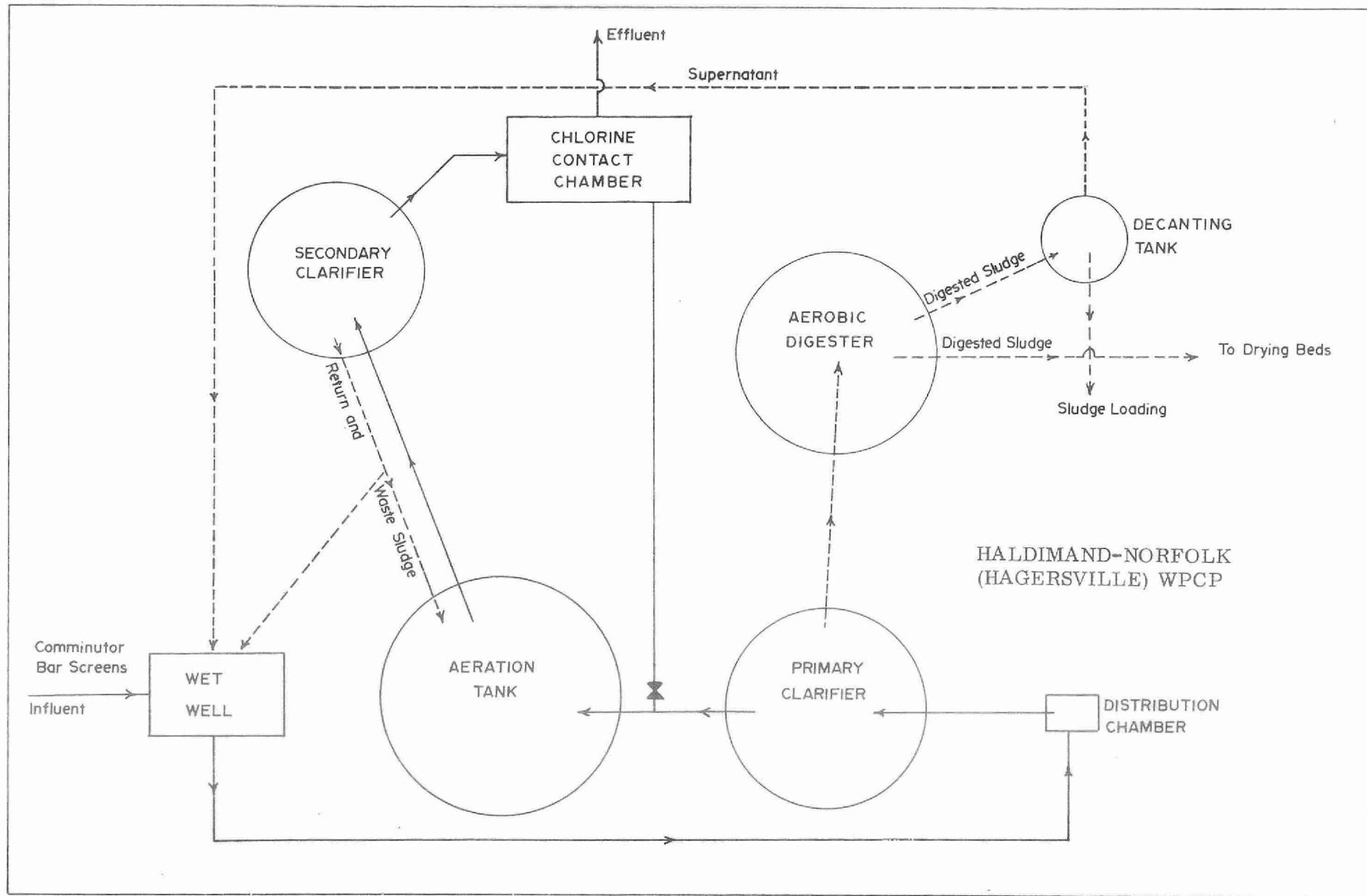
Plant Performance Unit

TECHNICAL SERVICES BRANCH

T. Cross, Director

CONTENTS

| | |
|-----------------------|----------|
| Title Page | 1 |
| Flow Diagram | 4 |
| Design Data | 5 |
| Operating Cost | 6 |
| Process Data | 8 |



DESIGN DATA

Project: Haldimand-Norfolk
(Hagersville) WPCP **PRIMARY CLARIFIER:**
Project No: 1-1001-72 25' dia. x 10' swd
Design Capacity: 0.25 MIGD Volume: 30644 I. gal. Detention: 2.9 hours
Surface overflow rate: 510 gal/ft² / day

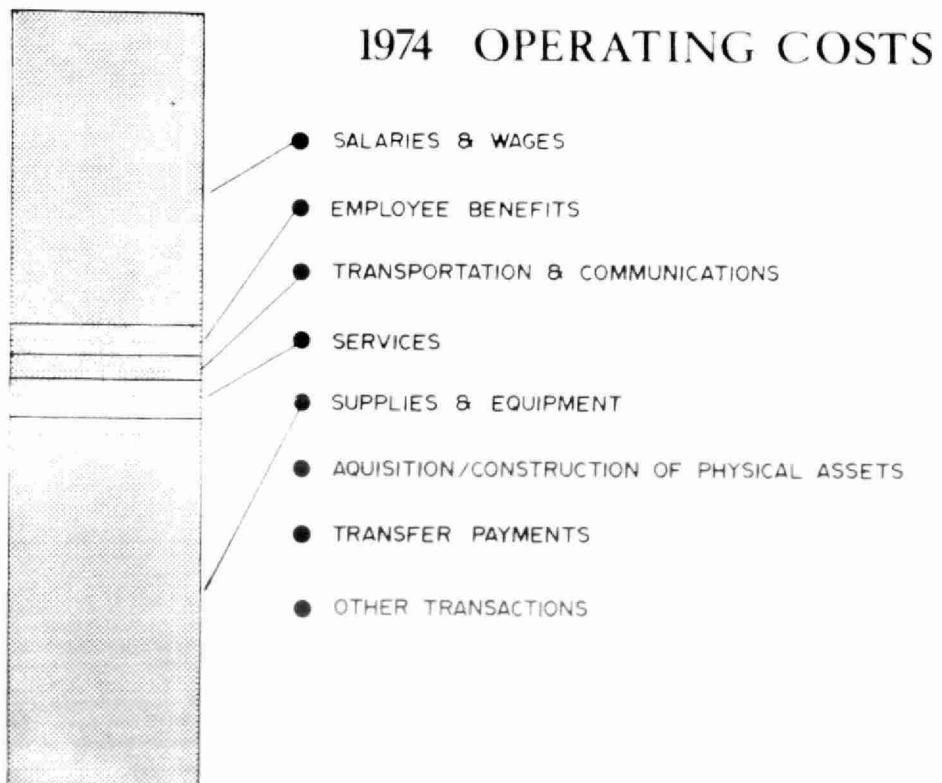
AERATION TANK:
36' dia. x 8' swd
Volume: 50831 I. gal. Detention: 4.8 hours

SECONDARY CLARIFIER:
24' dia. x 9' swd
Volume: 25415 I. gal Detention: 2.4 hours
Surface overflow rate: 551 gal/ft²/day

CHLORINE CONTACT CHAMBER:
6.5' x 15.5' x 7'
Volume: 4400 I. gal. Detention: 25 min.

SLUDGE DRYING BEDS:
Area: 7600 ft²

ANNUAL COSTS



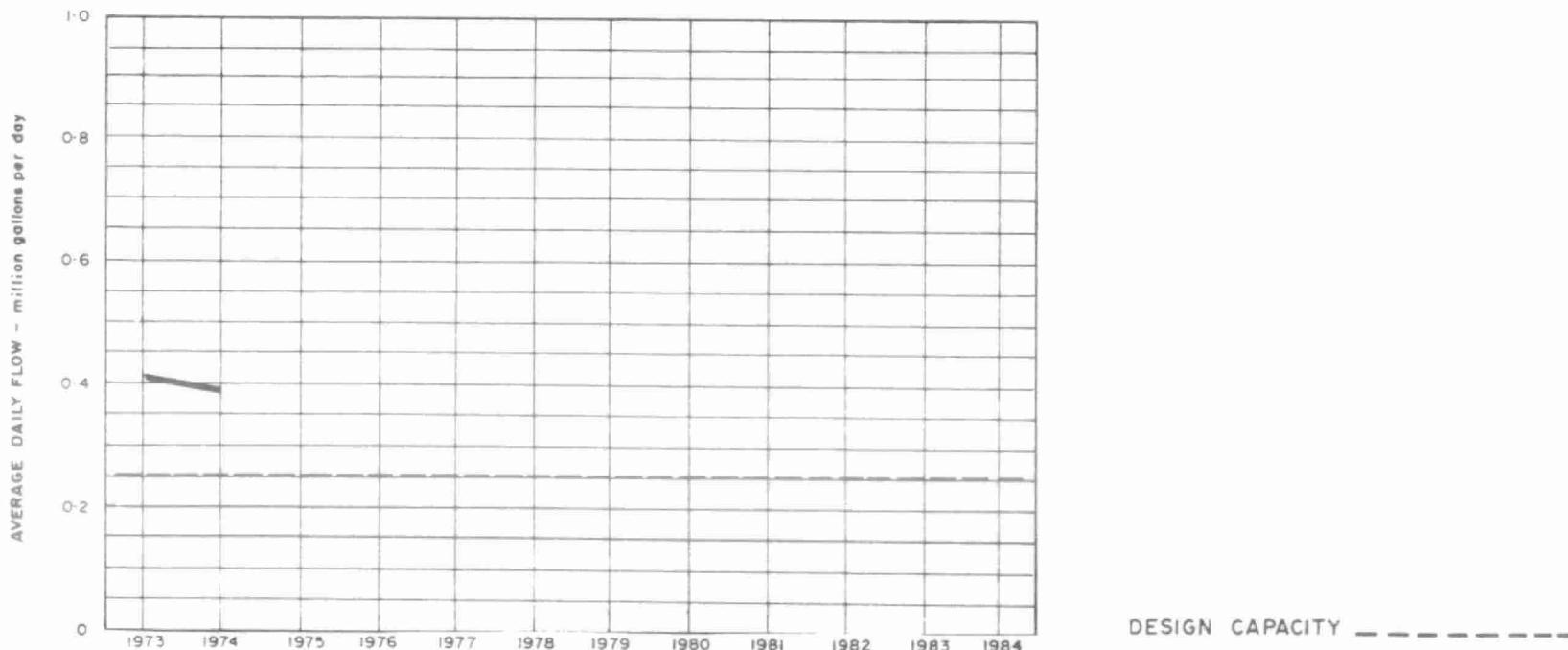
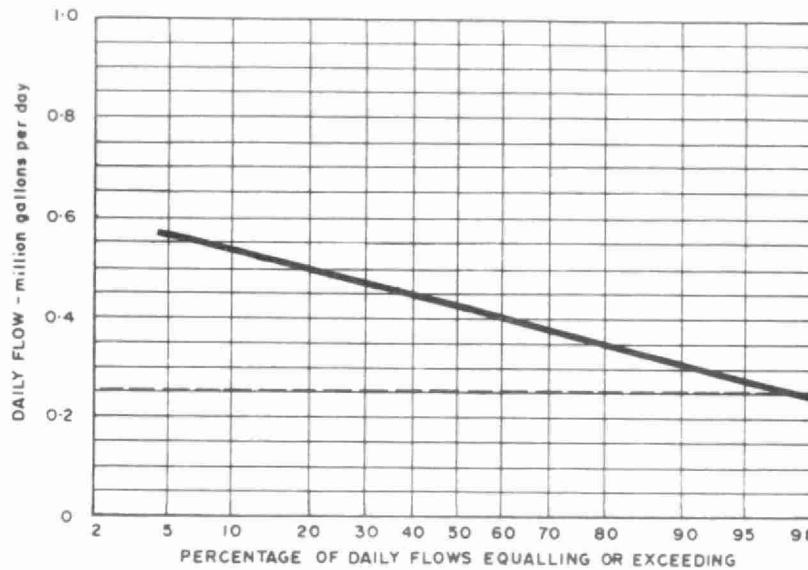
YEARLY OPERATING COSTS

| YEAR | SEWAGE TREATED in million gallons | TOTAL OPERATING COSTS | UNIT COSTS | |
|------|--------------------------------------|--------------------------|------------|----------|
| | | | \$/M.G. | €/lb BOD |
| 1973 | 151 | 14,610 | 97 | 13 |
| 1974 | 143 | 39,998 | 279 | 65 |

OPERATING EXPENDITURES

| | | |
|--|-------------------|-------------------|
| Regular Staff | \$ <u>11, 221</u> | \$ |
| Casual (Unclassified) Staff | <u>4, 264</u> | |
| TOTAL SALARIES AND WAGES | | <u>15, 485</u> |
| TOTAL EMPLOYEE BENEFITS | | <u>1, 418</u> |
| TOTAL TRANSPORTATION AND COMMUNICATIONS | | <u>1, 226</u> |
| Insurance | <u>427</u> | |
| Sludge Haulage | <u>-</u> | |
| Repairs and Maintenance | <u>775</u> | |
| Other Services | <u>745</u> | |
| TOTAL SERVICES | | <u>1, 947</u> |
| Machinery and Equipment | <u>11, 024</u> | |
| Chemicals | <u>1, 539</u> | |
| Utilities | <u>2, 748</u> | |
| Other Supplies and Equipment | <u>4, 611</u> | |
| TOTAL SUPPLIES AND EQUIPMENT | | <u>19, 922</u> |
| TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS | | |
| TOTAL TRANSFER PAYMENTS | | |
| OTHER TRANSACTIONS | | |
| GRAND TOTAL | GRAND TOTAL | \$ <u>39. 998</u> |

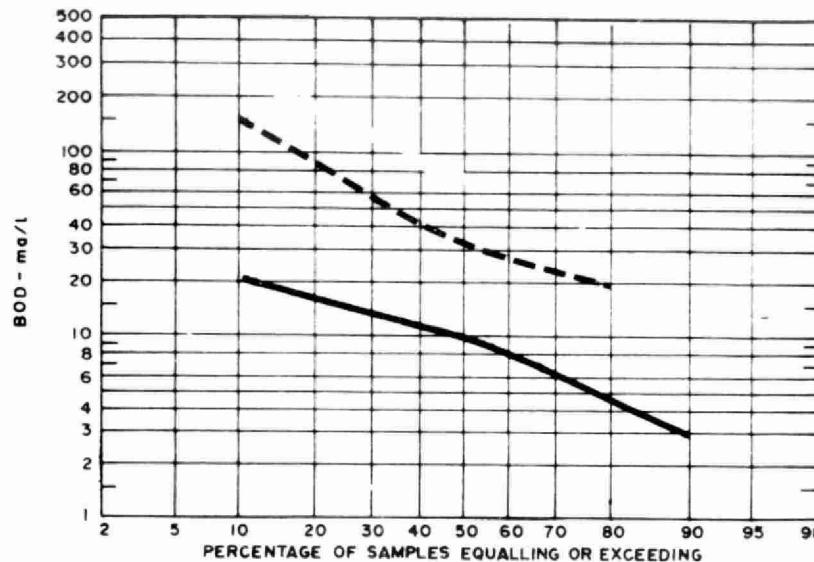
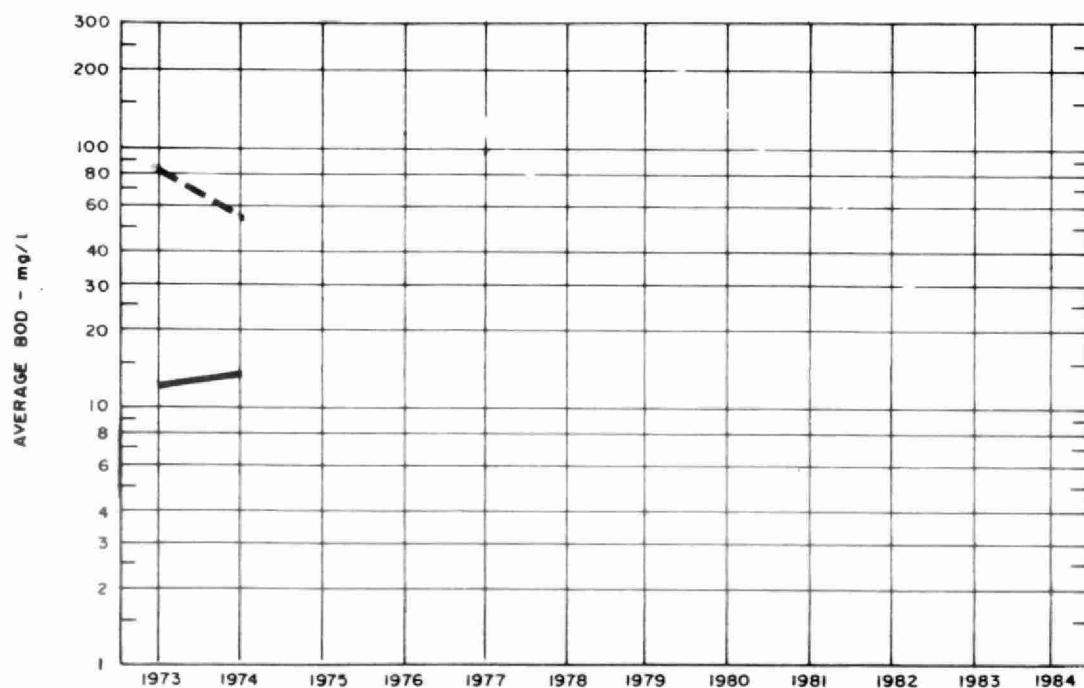
PROCESS DATA FLOWS



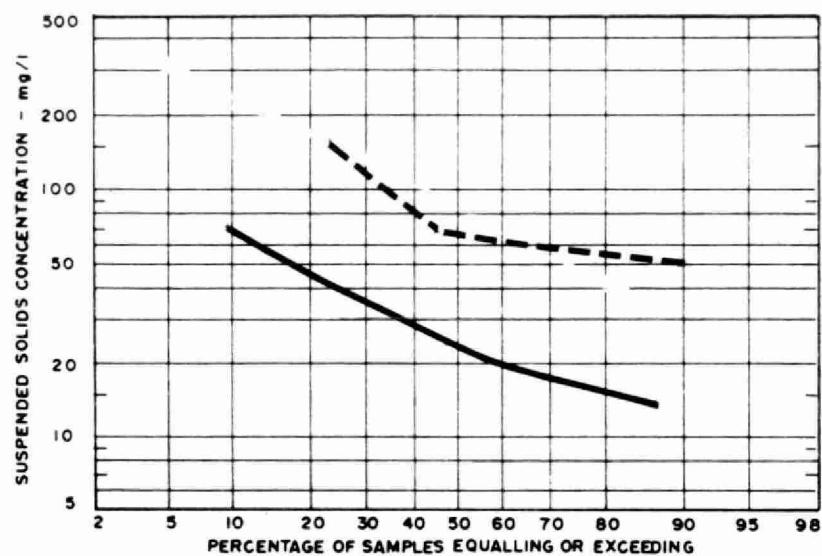
PLANT PERFORMANCE

| MONTH | FLOWS | | | BIOCHEMICAL OXYGEN DEMAND | | | | SUSPENDED SOLIDS | | | | PHOSPHORUS | |
|-----------------------|-------------------------------|----------------------------|-----------------------|---------------------------|------------------|-----------|------------------|------------------|------------------|-----------|------------------|--------------------|--------------------|
| | TOTAL FLOW million gallons | AVERAGE DAY mil. gal | MAXIMUM DAY mgd | INFLUENT mg/l | EFFLUENT mg/l | REDUCTION | | INFLUENT mg/l | EFFLUENT mg/l | REDUCTION | | INFLUENT mg/l P | EFFLUENT mg/l P |
| | | | | | | % | 10^3 pounds | | | % | 10^3 pounds | | |
| JAN | 14.50 | .47 | .59 | 42 | 17 | 60 | 3.6 | 60 | 20 | 67 | 5.8 | 1.8 | .4 |
| FEB | 11.85 | .42 | .50 | | | | | | | | | | |
| MAR | 13.22 | .43 | .49 | 40 | 20 | 50 | 2.6 | 60 | 30 | 50 | 4.0 | 2.2 | 1.8 |
| APR | 11.85 | .42 | .50 | 28 | 10 | 64 | 2.4 | 150 | 20 | 87 | 17.3 | 4.8 | .5 |
| MAY | 13.09 | .42 | .54 | 180 | 22 | 88 | 20.7 | 160 | <15 | 91 | 20.0 | 6.8 | .3 |
| JUNE | 14.19 | .47 | 1.02 | | | | | | | | | 6.2 | .6 |
| JULY | 9.59 | .31 | .90 | | | | | | | | | 3.0 | 1.7 |
| AUG | 9.71 | .31 | .41 | | | | | | | | | 3.0 | 1.7 |
| SEPT | 10.73 | .36 | .70 | 38 | 3 | 92 | 3.8 | 50 | 15 | 70 | 3.8 | 9.4 | 1.9 |
| OCT | 10.14 | .33 | .40 | 9 | 9 | 0 | 0 | 75 | 25 | 67 | 5.1 | 1.3 | .4 |
| NOV | 11.63 | .39 | .47 | | | | | | | | | | .8 |
| DEC | 12.77 | .41 | .50 | 80 | 8 | 90 | | 130 | 70 | 46 | | 3.2 | .8 |
| TOTAL | 143.27 | - | - | - | - | - | | - | - | - | | - | - |
| AVG. | | .39 | 1.02 | 57 | 14 | 75 | 5.1 | 93 | 28 | 70 | 7.8 | 3.8 | 1.2 |
| No. of Samples | - | - | - | 8 | 8 | - | - | 8 | 7 | - | - | 17 | 21 |

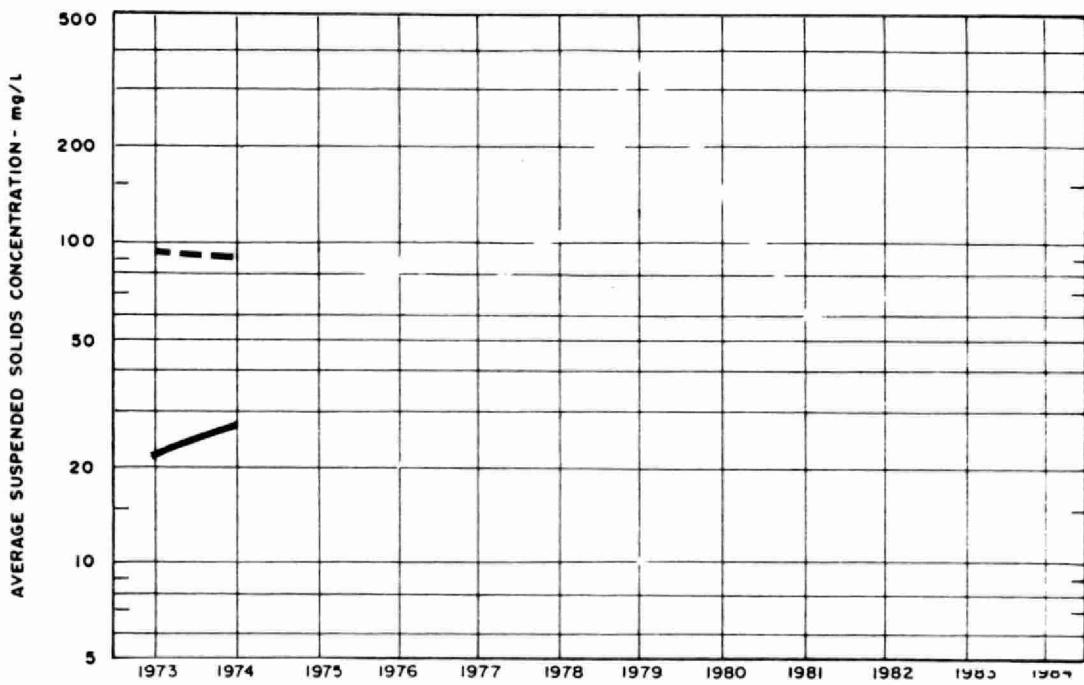
BIOCHEMICAL OXYGEN DEMAND



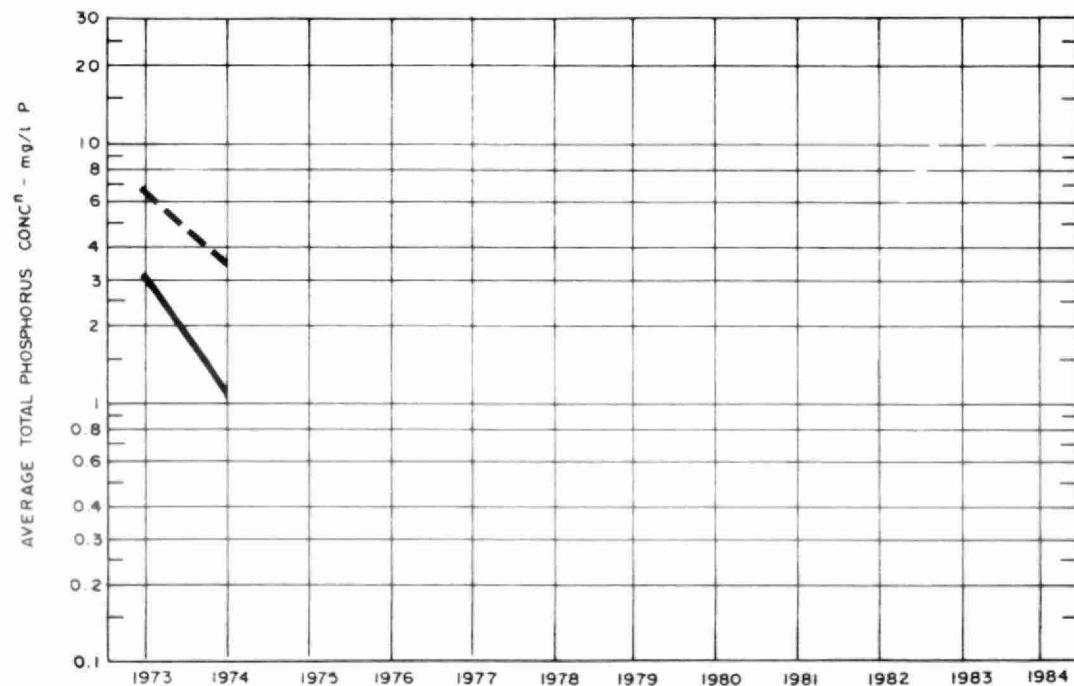
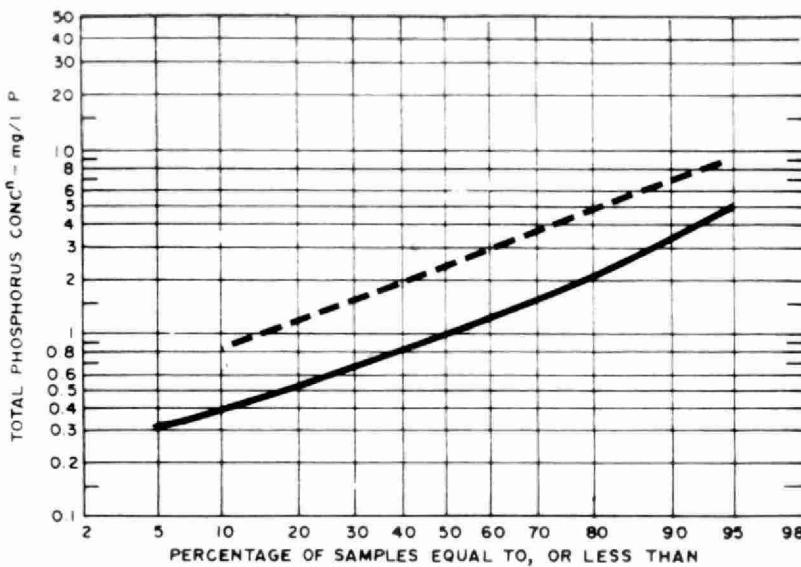
SUSPENDED SOLIDS



PLANT INFLUENT
PRIMARY EFFLUENT
PLANT EFFLUENT



PHOSPHORUS



PLANT INFLUENT ——————
PLANT EFFLUENT ——————

TREATMENT DATA

| MONTH | GRIT QUANTITY REMOVED cubic feet | CHLORINATION | | AERATION | | | WASTE SLUDGE | | | AEROBIC DIGESTER | | | |
|-------|---|--------------------------------|------------------------|----------------------|-----|-------------------------------|---------------------------|-----------------------------|--------------------|--------------------------------------|-----------------------------|--------------------|---------------------------------|
| | | Cl ₂ USED pounds | AVG. DOSAGE mg/l | MLSS CONC mg/l | F/M | AIR USED 1000 ft lb BOD | QUANTITY 10 gallons | SUSPENDED SOLIDS mg/l | VOL SOLIDS % | QUANTITY REMOVED 10 gallons | SUSPENDED SOLIDS mg/l | VOL SOLIDS % | AMOUNT HAULED cubic yards |
| | | | | | | | | | | | | | |
| JAN | | 354 | 2.4 | 2300 | .12 | | | | | | | | |
| FEB | | 347 | 3.1 | | | | | | | | | | |
| MAR | | 659 | 5.0 | | .05 | | | | | | | | |
| APR | | 408 | 3.1 | 4400 | .01 | | | | | | | | |
| MAY | | 379 | 3.0 | 3300 | .11 | | | | | | | | |
| JUNE | | 310 | 2.2 | | | | | | | | | | |
| JULY | | 354 | 3.7 | | | | | | | | | | |
| AUG | | 283 | 3.6 | | | | | | | | | | |
| SEPT | | 327 | 3.0 | | | | | | | | | | |
| OCT | | 323 | 3.2 | | | | | | | | | | |
| NOV | | 304 | 2.6 | | | | | | | | | | |
| DEC | | 360 | 2.8 | | | | | | | | | | |
| TOTAL | | 4408 | - | - | - | - | | - | - | | - | - | |
| AVG. | cu. ft/mil gal | | 3.1 | 3300 | .07 | | | | | | | | |

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